

## Planting Wetlands and Dams: A Practical Guide to Wetland Design, Construction and Propagation

by Nick Romanowski

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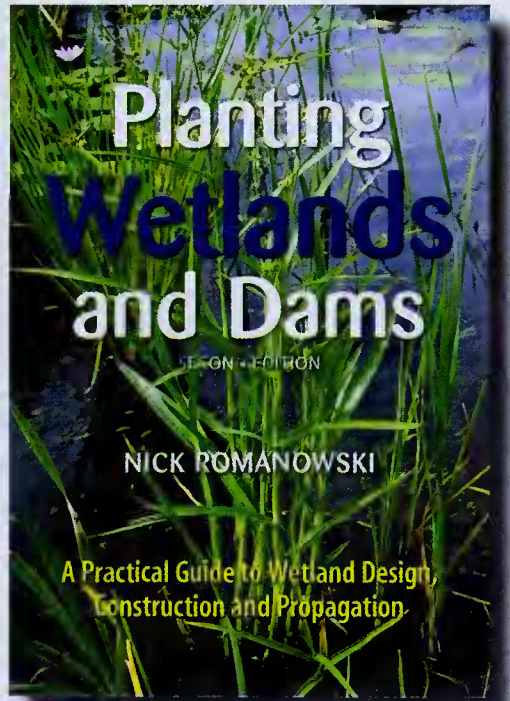
*Planting Wetlands and Dams* is indeed a practical guide to wetland design, construction, and plant selection and propagation. Each section of the book gives an overview of what is required for design and construction and reminds the reader of the factors that need to be considered before making decisions. Many of the wetland types, plant communities and aquatic plant species are illustrated with high quality colour plates.

The Guide begins with a description of the hydrology of a variety of wetland types, including artificial types such as constructed farm dams, and their plant communities. The importance of plants in wetlands for providing habitat, food and shelter for different animal groups is emphasised.

Before the planning of a wetland begins we are reminded that decisions about wetland design and construction must be made with a purpose in mind. Not all purposes are compatible or achievable in a single body of water, for example waterbird breeding, and provision of water for stock. Whatever the purpose of the wetland, the biodiversity can generally be enhanced by management of the hydrology to address the needs of selected species.

The Guide advocates a minimum impact approach towards construction. Site selection should follow natural contours as much as possible, with minimal earth moving to provide a balance between natural looking and inexpensive. Structures such as walkways, bird hides, fences, islands and bed profile should be used to manage people, stock and invasive species of animals and plants. Riparian vegetation and tall macrophytes can be positioned to protect the wetland against wind disturbance.

The legal requirements for constructing or restoring wetlands, as well as permits for collect-



ing seeds and other plant material for propagation, are outlined.

In any wetland construction or rehabilitation, assessment of the water retaining capacity of the bed material is essential. Where this is found to be inadequate, other options for sealing the wetland bed are discussed, including chemical sealing, synthetic liners or importation of suitable substrates from elsewhere. The underwater landscape needs to be sculpted with shelves, plateaus and pockets of appropriate depth to support plant growth.

Plants should be selected for specific purposes and conditions rather than simply using proprietary lists of species. In existing wetlands,

the seedbank may be lying dormant but still be capable of recolonising once a suitable water regime is returned to the system. Discussion of aquatic plant dispersal concludes that estimates of how far from home wetland plants can be usefully collected should be based on the total range of any distinct form of a species.

New wetlands need to be planted with stock grown from seed or asexual propagules, transplants from other wetlands, or by direct seeding. Useful tips are provided on the collection, propagation and planting out of seedlings and other propagules. Control of pests to the newly planted wetland, such as rabbits, carp, water-birds and common aquatic weeds, is discussed. The final chapter is an informative summary of what is known about the propagation, biology and ecology of common genera of aquatic

macrophytes used in wetland construction and rehabilitation.

I recommend this book to readers who are considering constructing a wetland. As every wetland is unique, this book will make the reader aware of the areas of investigation that need to be undertaken for particular wetland projects. This book is complemented by Romanowski's *Wetland Habitats: A Practical Guide to Restoration and Management* which outlines the considerations and trade-offs involved in managing a wetland.

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## Wetland Habitats: A Practical Guide to Restoration and Management

by Nick Romanowski

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*Wetland Habitats* reflects Nick Romanowski's interest and experience in the restoration and management of Australian natural and created wetlands. The book begins with a description of several types of wetland in terms of water quality and source, and the influence this has on determining the animal and plant communities that are associated with them. Many of the wetland types, impacts and threats, and key animal and plant species are illustrated with high quality colour plates.

Satisfactory habitat is not just a matter of the right water quality, shelter, food and a suitable place to breed, but is also affected by interactions with competitors and predators. Most wetland animals and many plants need more than one habitat for the long-term survival of the species. Many animal species move from one habitat to another as they mature, and their feeding or breeding requirements call for different resources.

Failings in wetland management to provide suitable habitat often stem from the fact that managers are prone to regard a wetland that looks attractive to them as one that should provide a desirable residence for the species it has been managed or created for. An attractive display of plants, the presence of water and a few species of birds are desirable parts of the wetland aesthetic; ephemeral wetlands are perceived as less desirable. Most created wetlands and dams have little habitat value for anything other than the most common and adaptable animals because their establishment did not have the specific requirements of a target species in mind.

Change over time, seasonal change, drought, flood and fire, changing salinity and physical movement of the wetland are discussed as natural components of wetland variability. Events such as flooding often trigger flowering in plants, and reproduction in fish, frogs